



## MINISTER FOR INFRASTRUCTURE, PLANNING AND LOGISTICS

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Dear Mr Alexander

Thank you for your letter of 31 October 2018, inviting a submission to the Inquiry into Automated Mass Transit.

The Northern Territory Government Department of Infrastructure, Planning and Logistics welcomes the opportunity to submit to the Inquiry, including to provide information on a recent trial of automated public transport in Darwin.

I will not be commenting on the use of automated mass rail and road transit, as these systems will not be viable in the Northern Territory in the short to medium term, due to our current low demand and small population base. Mass transit options relating to these modes may currently be more suitable for meeting the demand of larger, densely populated urban cities. However, in the short to medium term it is expected there will be opportunities in the Northern Territory for automated electric vehicles to provide small scale point to point passenger shuttle transit services on fixed routes in smaller urban areas.

To this end, in 2017 the Northern Territory Government undertook a trial of an electric driverless bus in the Darwin Waterfront Precinct and Central Business District, in collaboration with the Darwin Waterfront Corporation. The six month trial operated Australia's first EasyMile EZ10 Generation 1 automated vehicle with capacity for 12 passengers.

The service was operated in both on-road and pedestrian environments to test vehicle technology across various gradients, speed environments and distances. The bus generally operated well throughout the trial, with the following key findings and outcomes:

- Over the six month trial period, the bus carried nearly 6000 passengers and travelled over 1600 kilometres, providing a link between retail, dining, business and recreational areas.

- The community embraced the vehicle and its technology and provided positive feedback on the trial.
- While the vehicle was capable of consistently undertaking repeatable tasks and following a predetermined GPS map, it could not read road signs or other vehicle intentions (e.g. brake lights, indicator lights).
- The vehicle could not react to random occurrences or function independently enough to avoid obstacles such as cars or pedestrians which may appear on a programmed route. The vehicle's programmed response to obstacles was to stop, resulting in the need to restrict operations to low speed roads with low traffic or pedestrian volumes.
- As an electric vehicle, the need for re-charging impacted on the ability to operate over greater distances or for extended periods. In Darwin's hot and humid climate, this was further impacted by demand from the air conditioning system.
- Due to the testing nature of the trial, an operator was on board at all times as a precaution to manage safe operations, intervene and take control where necessary and record observations relating to the trial.
- The trial played an important role in testing current technology and informing future technology development. EasyMile has used data from the trial in its development of the Generation 2 vehicle, which has been equipped with an upgraded battery and air conditioning system.

With the current pace of ever changing and evolving technology, the Northern Territory will continue to work collaboratively with all Australian jurisdictions to develop a nationally consistent regulatory framework for automated vehicles to ensure they can be deployed safely and without unreasonable barriers.

In relation to electric vehicles, the Northern Territory will continue to monitor policy and operational developments across Australia and support the development of a national work plan to promote the uptake of, and transition towards, low and zero emission vehicles. This work will align with the current planning being undertaken by the Northern Territory Government to support the uptake of electric vehicles.

Cooperative Intelligent Transport Systems (C-ITS) technologies will play an important role in realising safe and efficient automated mass transit systems. I note that the Transport and Infrastructure Council recently tasked Austroads with an important suite of projects to investigate and support the deployment of C-ITS technologies in Australia, in which the Northern Territory will be involved.

A national approach is essential to ensure there is consistency in infrastructure and systems standards to support the emerging technologies of automated and electric vehicles into the future, including an approach to meet the challenges these technologies will face in remote areas of Australia.

Yours sincerely

EVA LAWLER

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